

10-6 Other Angles

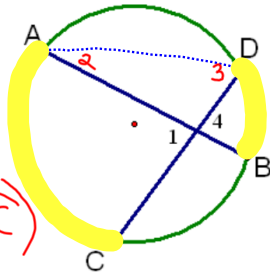
$$m\angle 2 = \frac{1}{2} m\widehat{DB}$$

$$m\angle 3 = \frac{1}{2} m\widehat{AC}$$

$$m\angle 1 = m\angle 2 + m\angle 3$$

$$m\angle 1 = \frac{1}{2} m\widehat{DB} + \frac{1}{2} m\widehat{AC}$$

$$m\angle 1 = \frac{1}{2} (m\widehat{DB} + m\widehat{AC})$$

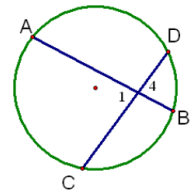


Theorem 10-12--The measure of an angle formed on the **inside** of a circle (by 2 secants or 2 chords) is half the **sum** of the measures of the intercepted arcs.

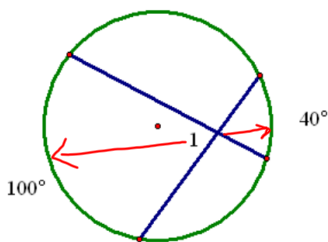
$$m\angle 1 = \frac{1}{2} (m\widehat{AC} + m\widehat{DB})$$

$$m\angle 1 = \frac{1}{2} \text{sum of arcs}$$

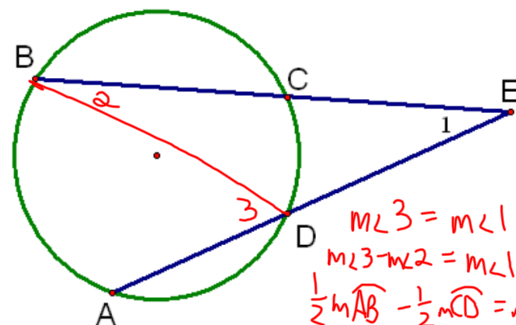
gsp



Find the measure of the angle.



$$\frac{1}{2} (100 + 40) = 70^\circ$$

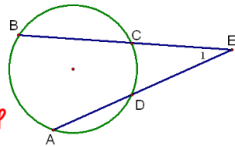


$$\begin{aligned} m\angle 3 &= m\angle 1 + m\angle 2 \\ m\angle 3 - m\angle 2 &= m\angle 1 \\ \frac{1}{2} m\widehat{AB} - \frac{1}{2} m\widehat{CD} &= m\angle 1 \\ m\angle 1 &= \frac{1}{2} (m\widehat{AB} - m\widehat{CD}) \end{aligned}$$

Theorem 10-14--The measure of an angle formed on the **outside** of a circle (by 2 secants, 2 tangents, or secant and a tangent) is half the **difference** of the measures of the intercepted arcs.

$$m\angle I = \frac{1}{2}(m\widehat{AB} - m\widehat{CD})$$

$$\text{outside} = \frac{1}{2} \text{ difference}$$

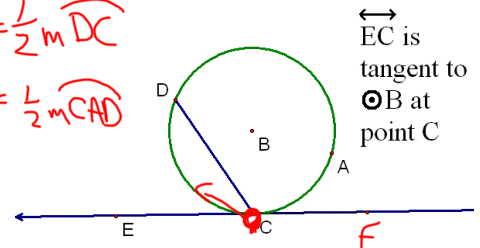


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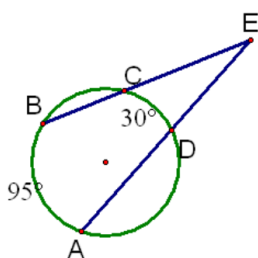
Theorem 10-13--An angle formed by a secant and a tangent at the point of tangency = $\frac{1}{2}$ intercepted arc

$$m\angle DCE = \frac{1}{2} m\widehat{DC}$$

$$m\angle DCF = \frac{1}{2} m\widehat{CAD}$$

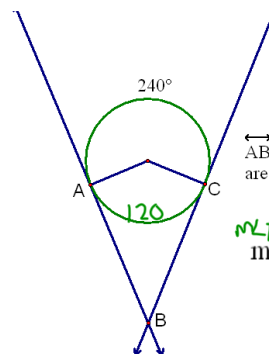


EC is tangent to $\odot B$ at point C



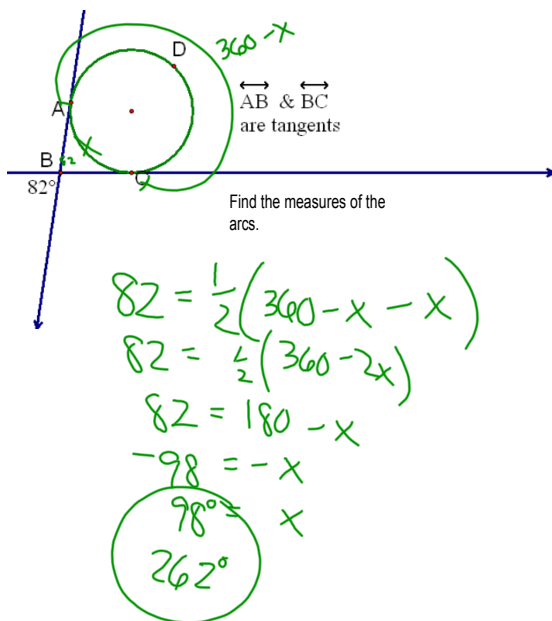
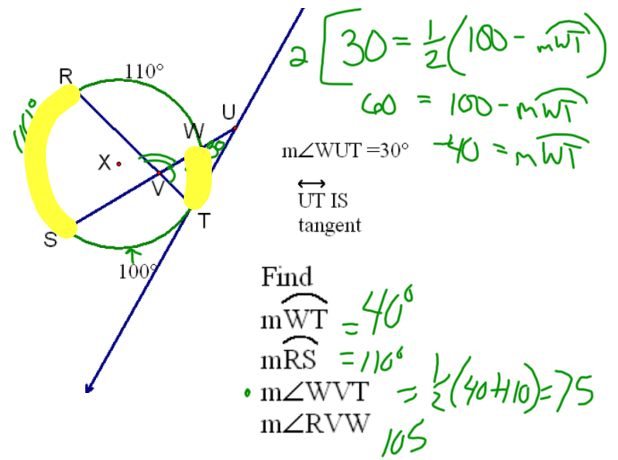
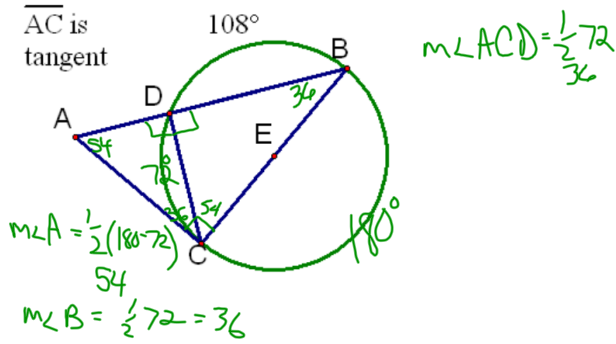
$$m\angle E = \frac{1}{2}(95 - 30)$$

$$32.5^\circ$$



$$m\angle B = \frac{1}{2}(240 - 120)$$

$$= 60^\circ$$



HW
p564-565 12-30

Attachments

10_6_gsp_example.gsp